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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,659	08/22/2001	Ingo Molnar	019322-000342	7912

24239 7590 01/29/2004

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EXAMINER	
ALI, MOHAMMAD	

ART UNIT	PAPER NUMBER
2177	6

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/934,659	MOLNAR, INGO	
	Examiner	Art Unit	
	Mohammad Ali	2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,5*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. This communication is responsive to the application filed on August 22, 2001.

2. Claims 1-28 are pending in this Office Action. Claims 1-28 are presented for examination.

Priority

3. Priority has been considered for the provisional application.

Specification

4. The disclosure is objected to because of the following informalities: In page 1, paragraph 0002 application serial no. is required.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledain et al. ('Ledain' hereinafter), US Patent 5,832,515 in view of Tzelnic et al. ('Tzelnic', hereinafter), US Patent 5,948,062.

With respect to claim 1,

Ledain discloses a method of handling a request from an application to perform a file operation relative to a specific file (see col. 5, lines 31-35), the method comprising the steps of:

receiving the request to perform the file operation (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer migration of data to the main filesystem disks in optimization of filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain);

attempting to perform the file operation atomically by retrieving a file path corresponding to the specific file from a file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain); and

notifying the application that the file operation could not be performed atomically if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

Ledain does not explicitly indicate the claimed "if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache".

Tzelnic discloses the claimed if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

As to claim 2,

Ledain teaches performing the file operation atomically if the file path corresponding to the file is stored in the file system namespace cache; and notifying the application that the file operation was performed atomically if the file operation was performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be

stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

As to claim 3,

Ledain teaches wherein the file system namespace cache is disposed within an operating system kernel (see col. 5, lines 62 to col. 6, lines 5).

As to claim 4,

Ledain teaches wherein the file system namespace cache is disposed within an operating system kernel (see col. 5, lines 62 to col. 6, lines 5).

With respect to claim 5,

Ledain discloses a method of handling a request to an operating system to perform a file operation, the request being sent from an application to the operating system, wherein the operating system can notify the application if the file operation cannot be performed atomically (see col. 10, lines 52-67, Abstract et seq), the method comprising the steps of:

sending the request to the operating system (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may, for example, be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain);

receiving a notification from the operating system that the file operation cannot be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a

system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain); and

redirecting the request if the notification is received from the operating system that the file operation was not performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

Ledain does not explicitly indicate the claimed "operation can not be performed atomically".

Tzelnic discloses the claimed operation can not be performed atomically (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because operation can not performed atomically of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

As to claim 6,

Ledain teaches wherein the redirecting of the request further comprises sending the request to blocking point handling within a user space including the application (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain).

As to claim 7,

Ledain teaches wherein the redirecting of the request further comprises sending the request to blocking point handling within a kernel for the operating system (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Fig. 2, Ledain).

With respect to claim 8,

Ledain discloses a computer program product having computer program code embodied therein, the computer program code for of handling a request from an application to perform a file operation related to a specific file (see col. 5, lines 37-61), the computer program code comprising:

instructions for receiving the request to perform the file operation (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer migration of data to the main filesystem disks in optimization of

filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain);

instructions for determining if a file path corresponding to the specific file is stored in a file system namespace cache (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer migration of data to the main filesystem disks in optimization of filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain);

instructions for performing the file operation atomically if the file path corresponding to the file is stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

instructions for notifying the application that the file operation was performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain); and

instructions for notifying the application that the file operation cannot be performed atomically if the file operation was not performed atomically because the file

path is not stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67, col. 11, lines 17-24 et seq, Ledain).

Ledain does not explicitly indicate the claimed "if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache".

Tzelnic discloses the claimed if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

As to claim 9,

Ledain teaches wherein the computer program code further comprises instructions for maintaining the file system namespace cache within an operating system kernel (see col. 11, lines 16-24 et seq).

With respect to claim 10,

Ledain discloses a computer program product having computer program code embodied therein, the computer program code for handling a request to an operating system to perform a file operation (see col. 5, lines 37-61), the computer program code comprising:

instructions for sending the request to the operating system (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain);

instructions for receiving a notification from the operation system that the file operation was performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

instructions for receiving a notification from the operating system that the file operation could not be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on

the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

instructions for using the file if a notification that the file operation was performed atomically is received (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer migration of data to the main filesystem disks in optimization of filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain); and

instructions for redirecting the request if a notification that the file operation could not be performed atomically is received (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer migration of data to the main filesystem disks in optimization of filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain).

Ledain does not explicitly indicate the claimed "operation could not be performed atomically".

Tzelnic discloses the claimed operation could not be performed atomically (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because operation could not be performed atomically of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

As to claim 11,

Ledain teaches wherein the instructions for the redirecting of the request further comprise instructions for sending the request to blocking point handling within a user space including the application (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer migration of data to the main filesystem disks in optimization of filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain).

As to claim 12,

Ledain teaches wherein the instructions for the redirecting of the request further comprise instructions for sending the request to blocking point handling within the an operating system kernel (the segment storage space represented by the log device disk is continually cleaned and optimized to receive immediate writes of data segments from the operating system and to selectively defer ('redirecting') migration of data to the main filesystem disks in optimization of filesystem data reads by the operating system core, see col. 11, lines 17-23, Fig. 2, Ledain).

With respect to claim 13,

Ledain discloses apparatus for handling a request from an application to perform a file operation relative to a specific file (see col. 5, lines 37-61), the apparatus comprising:

means for receiving the request to perform the file operation (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

means for determining if a file path corresponding to the specific file is stored in a file system namespace cache (see col. 11, lines 17-24 et seq);

means for performing the file operation atomically if the file path corresponding to the specific file is stored in the file system namespace cache (see col. 11, lines 17-24);

means for notifying the application that the file operation was performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain); and

means for notifying the application that the file operation was not performed atomically if the file operation was not performed atomically because the file path is not stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively

examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

Ledain does not explicitly indicate the claimed "if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache".

Tzelnic discloses the claimed if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

With respect to claim 14,

Ledain discloses apparatus for handling a request to an operating system to perform a file operation (see col. 5, lines 37-61), the apparatus comprising:

means for sending the request to the operating system (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may, for example, be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain);

means for receiving a notification from the operation system that the file operation was performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

means for receiving a notification from the operation system that the file operation could not be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

means for using the file if a notification that the file operation was performed atomically is received (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be

stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain); and

means for redirecting the request if a notification that the file operation was not performed atomically is received (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67, col. 11, lines 17-24 et seq, Ledain).

Ledain does not explicitly indicate the claimed "if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache".

Tzelnic discloses the claimed if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache of Tzelnic's teachings would have

allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

With respect to claim 15,

Ledain discloses an operating system (see col. 5, lines 37-61)comprising:

a file system including a file system namespace (see col. 11, lines 15-24 et seq); and

an operating system kernel operatively connected to the file system, the operating system kernel operative to enable the execution of at least one application, the operating system kernel (see col. 5, lines 60 to col. 6, lines 5 et seq) further comprising:

a file system namespace cache for caching file paths from the file system namespace (see col. 11, lines 15-24 et seq); and

an atomic look-up operation operable to determine if a specific file path corresponding to a specific file is stored in the file system namespace cache and to notify the at least one application whether a file operation relative to the specific file is being performed atomically based on whether the specific file path is stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

Ledain does not explicitly indicate the claimed "determine the specific path".

Tzelnic discloses the claimed determine the specific path (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because determine the specific path of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

As to claim 16,

Ledain teaches wherein the at least one application resides and executes within a user space that is operatively connected to the operating system kernel and the file system namespace (see col. 11, lines 17-24 et seq).

As to claim 17,

Ledain teaches wherein the at least one application resides and executes within the operating system kernel (see col. 5, lines 62 to col. 6, lines 5 et seq).

As to claim 18,

Ledain teaches wherein the operating system kernel further comprises blocking point handling which can be invoked if and when the file opration cannot be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery

operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

As to claim 19,

Ledain teaches wherein the operating system kernel further comprises blocking point handling which can be invoked if and when the file operation cannot be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

As to claim 20,

Ledain teaches wherein the operating system kernel further comprises blocking point handling which can be invoked if and when the file operation cannot be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

As to claim 21,

Ledain teaches wherein the user space further comprises blocking point handling which can be invoked if and when the file operation cannot be performed atomically (the

resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

As to claim 22,

Ledain teaches wherein the operating system kernel and the user space further comprise blocking point handling which can be invoked if and when the file operation cannot be performed atomically (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

With respect to claim 23,

Ledain discloses an instruction execution system operable to handle a request from an application to an operating system to perform a file operation relative to a specific file by performing (see col. 5, lines 37-61) the steps of:

sending the request to perform the file operation from the application to the operating system (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may, for example, be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain);

attempting to perform the file operation atomically by, at least in part, determining if a file path corresponding to the specific file is stored in a file system namespace cache; notifying the application that the file oepration could not be performed atomically if the file path is not stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain);

redirecting the request if the file operation was not performed atomically because the path is not stored in the file system namespace cache (the resident store of completed atomic transactions held by the filesystem on the log device disks need only be progressively examined during a system recovery operation to determine where valid data found on the log device disks is to be stored in a corresponding logged filesystem on the main filesystem disks, see col. 10, lines 52-67 et seq, Ledain).

Ledain does not explicitly indicate the claimed "if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache".

Tzelnic discloses the claimed if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache (file system software for managing the file directory is replicated in each data mover computer. The cached disk array recognizes logical block addresses, and the cached

disk array has a limited internal locking facility ensuring that reading or writing to a logical block is an atomic operation, see Abstract, col. 10, lines 29-39).

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combined the teachings of the cited references because if the file operation could not be performed atomically because the file path is not stored in the file system namespace cache of Tzelnic's teachings would have allowed Ledain's system in the network to cached data in the storage system, as suggested by Tzelni at col. 2, lines 10-16 et seq.

As to claim 24,

Ledain teaches wherein the file system namespace cache is disposed within an operating system kernel (see col. 5, lines 63 to col. 6, lines 5 et seq).

As to claim 25,

Ledain teaches wherein the redirecting of the request further comprises sending the request to blocking point handling within a user space including the application (see col. 10, lines 45-67).

As to claim 26,

Ledain teaches wherein the redirecting of the request further comprises sending the request to blocking point handling within a kernel of the operating system (see col. 10, lines 45-67 et seq).

As to claim 27,

Ledain teaches wherein the redirecting of the request further comprises sending the request to blocking point handling within a user space including the application

(completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may, for example, be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain).

As to claim 28,

Ledain teaches wherein the redirecting of the request further comprises sending the request to blocking point handling within a kernel of the operating system (completed atomic transfers('sending') of data to the log device disks are fully recoverable from the log device disks without necessary reference to any control data as may, for example, be stored transiently in main memory 16 or at significant cost, see col. 10, lines 52-55, Ledain).

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (703) 605-4356. The examiner can normally be reached on Monday to Thursday from 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703) 306-5631. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for any communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Mohammad Ali

Patent Examiner

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January 22, 2004